

REMARKS

Applicants' undersigned attorney thanks the Examiner for the Examiner's comments. Applicants respectfully request reconsideration of this patent application, particularly in view of the above Amendment and the following remarks. Currently, Claims 1-23 are pending.

Amendment to the Claims

Claims 1-23 have been examined, with no claims being allowed. Claims 1, 12, and 20 have been amended, and Claims 2 and 3 have been canceled. No new matter has been added by this amendment.

Applicants have amended Claim 1 to remove ethylene-propylene monomer (EPM) and ethylene-propylene rubber (EPR) from the Markush group.

Applicants have further amended Claim 1 to include the explicit limitation of the impact modifier having elastomeric properties. Support for this amendment is provided at page 7, lines 5-6, of the specification.

Applicants have amended Claims 1, 12, and 20 to include the limitation of the fibers comprising at least 75% by weight polypropylene. Support for this limitation is provided at page 6, line 20 – page 7, line 2, and in the Examples on pages 13-26.

Applicants respectfully request cancellation of Claims 2 and 3.

No additional fee is due for this Amendment because the number of independent claims remains unchanged and the total number of claims also remains unchanged.

Claim Objections

The objection to Claims 2 and 3 is now moot in view of Applicants' cancellation of Claims 2 and 3. Accordingly, Applicants respectfully request reconsideration and withdrawal of this objection.

Claim Rejections - 35 U.S.C. §112

The rejection of Claims 1-11 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement is respectfully traversed, particularly in view of the above Amendment and the following remarks.

Applicants have amended Claim 1 to remove ethylene-propylene monomer and ethylene-propylene rubber from the Markush group. For at least this reason, Applicants respectfully submit that Claims 1-11 do not contain new matter. Thus, Applicants respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. §102**A. Tucker**

The rejection of Claims 1-5, 8-13, and 16-23 under 35 U.S.C. §102(e) as being anticipated by Tucker (U.S. Patent 6,638,636) is respectfully traversed, particularly in view of the enclosed Declaration Under 37 CFR 1.132 showing that any invention disclosed but not claimed in Tucker was derived from an inventor of the present application and is thus not an invention “by another.”

B. Collier, IV et al.

The rejection of Claims 1-6, 10-14, and 18-23 under 35 U.S.C. §102(b) as being anticipated by Collier, IV et al. (U.S. Patent 5,288,791, hereinafter referred to as “Collier”) is respectfully traversed, particularly in view of the above Amendment and the following remarks.

Collier discloses an elastic nonwoven web formed from elastic fibers composed of a blend of (1) a styrene-poly(ethylene-propylene)-styrene thermoplastic elastomeric block copolymer or a mixture of a styrene-poly(ethylene-propylene)-styrene elastomeric block copolymer and a styrene-poly(ethylene-butylene)-styrene elastomeric block copolymer, and (2) a tackifying resin. The blend used to form the elastic nonwoven web and/or elastic fibers may also include a polyolefin and an extending oil.

For a reference to anticipate a claim, the reference must disclose each and every element or limitation of the claim. Collier does not disclose each and every element or limitation of independent Claims 1, 12, and/or 20.

Applicants' invention as recited in independent Claims 1, 12, and 20 includes no more than 25% by weight impact modifier, and at least 75% by weight polypropylene. In contrast, Collier discloses from about 50 to about 80% by weight styrene-poly(ethylene-propylene)-styrene (SEPS) elastomeric block copolymer or mixture of SEPS and styrene-poly(ethylene-butylene)-styrene (SEBS) elastomeric block copolymer, and from about 3 to about 23% by weight polyolefin. The Examiner suggests that a blend comprising about 80% of the elastomeric block copolymers, in which 40 parts (of 100) would be styrene-poly(ethylene-propylene)-styrene, would result in about 3.2% of styrene-poly(ethylene-propylene)-styrene in the blend. However, 40 parts of 100 is 40%, and 40% of 80% is 32%, not 3.2%. Applicants' claims recite up to 25% by weight impact modifier, which is well below the range of SEPS and/or SEBS disclosed in Collier. Additionally, Applicants' limitation of at least 75% by weight polypropylene is far greater than the 3-23% range disclosed in Collier.

For at least the reasons presented above, Applicants respectfully submit that Claims 1, 12, and 20 are not anticipated by Collier. Because Claims 4-6 and 10-11 depend from Claim 1, Claims 13-14 and 18-19 depend from Claim 12, and Claims 21-23 depend from Claim 20, these claims are also not anticipated by Collier. Thus, Applicants respectfully request withdrawal of this rejection.

C. Ogale et al.

The rejection of Claims 1-5, 7, 9-10, and 20-22 under 35 U.S.C. §102(b) as being anticipated by Ogale et al. (U.S. Patent 5,346,756, hereinafter referred to as "Ogale") is respectfully traversed, particularly in view of the above Amendment and the following remarks.

Ogale discloses a nonwoven textile material made up of fibers including a blend of a propylene polymer material (A) and an olefin polymer material (B). The olefin polymer material (B) may be a propylene polymer composition consisting essentially of: (a) from 10 to 50% of a propylene polymer having an

isotactic index of greater than 80, or a copolymer of propylene with ethylene or a C₄-C₈ alpha-olefin or combinations thereof, containing over 80% propylene and having an isotactic index greater than 80, (b) from 5 to 20% of a semi-crystalline copolymer fraction, which copolymer is insoluble in xylene at room or ambient temperature, and (c) from 40 to 80% of a copolymer fraction of ethylene with propylene or a C₄-C₈ alpha-olefin or combinations thereof, and optionally with minor amounts of a diene, said copolymer fraction containing less than 40% ethylene or a C₄-C₈ alpha-olefin or combinations thereof, being soluble in xylene at room temperature and having an intrinsic viscosity from 1.5 to 4 dl/g, wherein the total of the (b) and (c) fractions, based on the total olefin polymer composition, being from about 50% to 90%, and the weight ratio of (b)/(c) being less than 0.4.

As mentioned above, for a reference to anticipate a claim, the reference must disclose each and every element or limitation of the claim. Ogale does not disclose each and every element or limitation of independent Claims 1 and/or 20.

Contrary to the Examiner's assertion, Ogale fails to disclose the amount of ethylene-propylene copolymer to be 1% in Col. 2, lines 35-37, or in Examples 1-2, because 20% x 50% is 10%, not 1%. Ogale also discloses fibers made up of 5 to about 95% propylene polymer material (A), which means that the olefin polymer material (B) must account for *at least 5%* of the fiber. Even if component (B) were the equivalent of an impact modifier, which Applicants believe is not the case, the amount of impact modifier recited in Applicants' Claim 1 (0.59-4%) is still less than the amount of any alleged impact modifier component disclosed by Ogale.

In Ogale, the propylene polymer material and the olefin polymer material are prepared by polymerization, generally by sequential polymerization *in the case of the olefin polymer material*, of the relevant monomers in the presence of a stereospecific Ziegler-Natta catalyst system having a solid catalyst component supported on a magnesium dihalide in active form. The olefin polymer material includes components (a) and (b), and optionally (c). As pointed out in Applicants' earlier response, and as evidenced by Schmidt et al. (U.S. Patent No. 5,804,658), polymerization of a mixture of ethylene, propylene, and a diene in the presence of a Ziegler-Natta catalyst system would result in an EPDM rubber. However, Ogale

discloses sequential polymerization of more than just ethylene, propylene, and a diene. More particularly, Ogale discloses polymerization of (a) a propylene polymer having an isotactic index of greater than 80, or a copolymer of propylene with ethylene or a C₄-C₈ alpha-olefin or combinations thereof, containing over 80% propylene and having an isotactic index greater than 80, (b) a semi-crystalline copolymer fraction, which copolymer is insoluble in xylene at room or ambient temperature, and (c) a copolymer fraction of ethylene with propylene or a C₄-C₈ alpha-olefin or combinations thereof, and optionally with minor amounts of a diene, said copolymer fraction containing less than 40% ethylene or a C₄-C₈ alpha-olefin or combinations thereof. Since (a), (b), and (c) are polymerized prior to blending the resulting olefin polymer material with the propylene polymer material, the polymerization of (a), (b), and (c) in any order fails to result in EPDM per se because (c) must still be polymerized with (a) and (b). Consequently, Ogale fails to disclose a fiber comprising polypropylene blended with EPDM.

Additionally, Applicants' invention as recited in independent Claims 1 and 20 requires that a fiber include polypropylene blended with an impact modifier, *wherein the impact modifier has elastomeric properties*. More particularly, in Claim 1 the impact modifier is either ethylene-propylene-diene-monomer (EPDM), styrene/ethylene-co-butadiene/styrene (SEBS), styrene-poly(ethylene-propylene)-styrene-poly(ethylene-propylene) (SEPSEP), a multi-block elastomeric copolymer, polyurethane, polyamide, polyester, single-site or metallocene-catalyzed polyolefin having density less than about 0.89 grams/cc, or ethylene/styrene, while in Claim 20 the impact modifier is either EPDM, SEBS, or SEPSEP.

Ogale fails to disclose the combination of polypropylene blended with any impact modifier. In particular, Ogale fails to disclose the combination of polypropylene blended with any of the impact modifiers recited in Claims 1 and 20. As defined on page 7, lines 5-6, of the present application, and recited explicitly in Claims 1 and 20, the term "impact modifier" refers to "a synthetic material having elastomeric properties." Ogale fails to disclose a combination of polypropylene with a synthetic material having elastomeric properties.

The molecular structure of such block copolymers as SEBS and SEPSEP, for example, includes block segments of styrene monomer units and rubber monomer units. Prior to processing, polystyrene end-blocks are associated in rigid domains. "Physical crosslinking" via these domains yields a continuous three-dimensional network. During processing, in the presence of heat and shear or solvent, the polystyrene domains soften and permit flow. After cooling or solvent evaporation, the polystyrene domains reform and harden, locking the rubber network in place. This "physical crosslinking" and the reinforcing effect of the styrene domains give these polymers their high tensile strength. The rubber mid-block gives them their elasticity. Ogale fails to disclose any olefin polymers having the elastomeric properties of EPDM, SEBS, and/or SEPSEP.

Furthermore, Ogale discloses lower ethylene content random copolymers, whereas the present invention includes high ethylene content copolymers. More particularly, as known by those skilled in the art, EPDM and the rubber monomer units of the elastomeric block copolymers typically include at least 40% ethylene, or more particularly between about 48% and about 72% ethylene for EPDM. In contrast, Ogale discloses a random propylene terpolymer including from 1.5 to 5% ethylene (Col. 1, lines 43-46), or a propylene polymer composition including from 40 to 80% of a copolymer fraction that contains less than 40% ethylene (Col. 1, line 64 – Col. 2, line 12), such that the propylene polymer composition includes less than 16 to 32% ethylene. Consequently, the resulting material in Ogale is quite different from the fibers of the present invention.

For at least the reasons presented above, Applicants respectfully submit that Claims 1 and 20 are not anticipated by Ogale. Because Claims 2-5, 7, and 9-10 depend from Claim 1, and Claims 21-22 depend from Claim 20, these claims are also not anticipated by Ogale. Thus, Applicants respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. §103**A. Collier in view of Ogale**

The rejection of Claims 7, 9, 15, and 17 under 35 U.S.C. §103(a) as being unpatentable over Collier as applied to Claims 1 and 12 above, further in view of Ogale, is respectfully traversed.

As mentioned above, Collier discloses an elastic nonwoven web formed from elastic fibers composed of a blend of (1) 50-80% by weight styrene-poly(ethylene-propylene)-styrene thermoplastic elastomeric block copolymer or a mixture of a styrene-poly(ethylene-propylene)-styrene elastomeric block copolymer and a styrene-poly(ethylene-butylene)-styrene elastomeric block copolymer, and (2) a tackifying resin. The blend used to form the elastic nonwoven web and/or elastic fibers may also include 3-23% by weight polyolefin.

Applicants' invention as recited in independent Claims 1 and 20 includes up to 25% by weight impact modifier, which is well below the 50-80% range of block copolymers disclosed in Collier, and at least 75% by weight polypropylene, which is far greater than the 3-23% range disclosed in Collier.

Even if the fibers of Collier were formed into yarn or woven fabric based on the yarn and woven textile materials disclosed in Ogale, the resulting yarn or woven fabric would not disclose or suggest Applicants' claimed invention because the composition of the Collier fibers falls well outside of the ranges recited in Applicants' claims and, consequently, results in completely different fibers than those claimed by Applicants.

For at least the reasons given above, Applicants respectfully submit that the teachings of Collier in view of Ogale fail to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

B. Ogale in view of Collier

The rejection of Claims 6, 11, and 23 under 35 U.S.C. §103(a) as being unpatentable over Ogale as applied to Claims 1 and 20 above, further in view of Collier, is respectfully traversed.

As discussed above, Ogale fails to disclose a combination of polypropylene blended with anything that would be considered an “impact modifier” as defined by Applicants. In particular, Ogale fails to disclose the combination of polypropylene blended with any of the impact modifiers recited in Applicants’ Claims 1 and 20.

Even if the fibers of Ogale were formed into staple or absorbent fibers based on the staple and absorbent fibers disclosed in Collier, the resulting staple or absorbent fibers would not disclose or suggest Applicants’ claimed invention because the composition of the Ogale fibers is different than the composition of the fibers claimed by Applicants.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants’ disclosure.

There is no suggestion or motivation to modify or combine the teachings of Collier and Ogale. Not only are the fibers in Collier in Ogale very different from Applicants’ claimed fibers, but the fibers in Collier and Ogale are also very different from one another. Collier discloses elastic fibers composed primarily of SEPS or a mixture of SEPS and SEBS, and a tackifying resin. A minor amount of polypropylene may be present in the fibers. Ogale discloses fibers including a blend of a propylene polymer material and an olefin polymer material polymerized in the presence of a particular catalyst system. Even if the teachings of Collier and Ogale were combined, there is no reasonable expectation that a person skilled in the art would derive a fiber comprising at least 75% by weight polypropylene blended with an impact modifier because Collier discloses a very small amount of polypropylene and Ogale discloses a wide range of polypropylene content, but neither reference

discloses or suggests a minor amount of an impact modifier having elastomeric properties.

For at least the reasons given above, Applicants respectfully submit that the teachings of Ogale in view of Collier fail to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Applicants believe that this case is now in condition for allowance. If the Examiner feels that any issues remain, then Applicants' undersigned attorney would like to discuss the case with the Examiner. The undersigned can be reached at (847) 490-1400.

Respectfully submitted,



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